

## ABSTRACT OF THE DISCLOSURE

An arrayed waveguide grating optical multiplexer/demultiplexer includes an arrayed waveguide connected to at least one first optical waveguide via a first slab waveguide, a plurality of second optical waveguides connected to the arrayed waveguide via a second slab waveguide. At least one expanding width waveguide has a first end portion and a second end portion having a second width larger than a first width of the first end portion. Each first end portion is connected to each first optical waveguide. The second end portion is connected to the first slab waveguide. The first width of the first end portion is larger than a first optical waveguide width of the at least one first optical waveguide. The first width of the first end portion satisfies a single mode condition. A width of the expanding width waveguide increases from the first end portion toward the second end portion.

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